

Alleynes (J. S. B.)

INTRODUCTORY LECTURE

DELIVERED AT THE

OPENING OF THE SESSION 1865—66,

OF THE

St. Louis College of Pharmacy,

BY

✓
PROF. J. S. B. ALLEYNE.

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ST. LOUIS, MO.,

THEO. PLATE & CO., Printers & Binders, Nos. 16 & 18 Chesnut Street.

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1866.

St. Louis College of Pharmacy,
St. Louis, Nov. 29, 1865.

Dr. J. S. B. ALLEYNE.

Sir,

At a meeting of the Students of the St. Louis College of Pharmacy, held on the 29th day of November, the following proceedings were had :

Mr. E. J. Williamson was called to the chair, and V. B. S. Reber was appointed Secretary.

The following resolutions were unanimously adopted:

Resolved, That a Committee of Five be appointed by the Chair, to wait upon Dr. ALLEYNE, and request of him a copy of his Inaugural Address, as Professor of Materia Medica in the St. Louis College of Pharmacy, for publication.

The Chair appointed the following named Gentlemen as said Committee: Messrs. Alex. Mestebrook, J. H. Ehlers, Hugo Krebs, F. Streit, E. G. O'Gallagher.

Resolved, That a Committee of three be appointed to take measures for the publication of the same, if agreeable to Dr. Alleyne.

Messrs. V. B. S. Reber, L. Thro and E. Lindemann were appointed said Committee.

Resolved, That the Secretary be directed to furnish a copy of the proceedings to Dr. Alleyne.

V. B. S. REBER,
Secretary.

E. J. WILLIAMSON,
President.

St. Louis, Dec. 4th, '65.

Gentlemen.

I cannot but comply with the very complimentary request of your note of the 29th ult. I place herewith the manuscript of the Introductory at your disposal.

Be pleased to accept for yourselves individually and the class whom you represent my best assurances of regard and esteem.

L. S. B. ALLEYNE.

To

Messrs. A. Mestebrook, J. H. Ehlers.

F. Streit, H. Krebs, E. G. O'Gallagher,

Committee.

INTRODUCTORY LECTURE

BEFORE THE

COLLEGE OF PHARMACY,

AT ITS OPENING, OCTOBER 2d, 1865.

GENTLEMEN:

We are assembled here this evening to inaugurate a College of Pharmacy; an institution, which has for its object, instruction in all that concerns the commerce of drugs and the preparing and dispensing of medicines for the physician's use; further than all this, and as a natural consequence of it, the elevating of Pharmacy to the status of the exact studies and the placing it coequal with medicine in its efforts towards the relief of human suffering. It will be conceded by all, without reference to the medical theories, that may be entertained, that the importance of this object cannot be overestimated; whether we regard the effectiveness of the means, or the direction in which they shall be applied. For what more essential and more ennobling than the relieving and keeping in order that divine mechanism, the human structure, strained and worn and exhausted by the daily round of petty cares and struggles, which it imposes upon itself; or in what can the human mind better and more profitably exercise its faculties than in the discovery and study of those agents which have been so lavishly scattered for our benefit by an All-wise hand! The reward is great for those who will labor earnestly, and indeed the laborers are many.

With such an extensive field before us, from which to gather our resources, for it embraces the world; and with such an exalted object in view whither all our efforts tend, it is wise so to use, and economize these rich means in our possession as to reach the desired end in a manner the most ready and the most advantageous; it is pleasant to wander along and sip the sweets from every flower as fancy may suggest, but reason tells us, it is not so profitable; nowhere is there shown a greater necessity for some system in learning, than in Pharmacy; composed of several important branches of knowledge, each an

extensive and severe study in itself, having tested the powers of the highest intellects, it seems natural that a form of education should be given to it, which is bestowed on other objects of instruction, and that it should be as earnestly and thoroughly taught; this can only be done by schools, and by a division of the whole subject of Pharmacy into its natural elements, giving to each the attention its importance demands. And this has been already effectively accomplished in this Country and in Europe, for Schools of Pharmacy are by no means of recent date; and to whatever department of the science we may turn, whether to *Materia Medica*, or Chemistry, or Pharmacy proper, we cannot but be surprised at the extent and minuteness with which it has been elaborated.

From the widest ends of the earth, from the centre to the utmost pole, every division, every region contributes something for man's physical well being. If we ascend the pinnacles of the highest mountains, or descend to those terrible depths of ocean, where to the ear every thing sleeps forever; if we penetrate to those icy regions, where nothing is left of vegetation but the crisp moss, which forms the precarious and scanty food of the deer, or passing to the middle zone, "where the air, the earth and the water teem with delighted existence;" if we upheave the very foundations of the earth, we find in every direction, whether the animal, mineral or vegetable kingdom, something deposited for our wants. Do but enter the laboratory of the Chemist, where lies strown at his feet, this lavishness of nature's own providing; his heart becomes faint with the excess of his wealth; which ever way he turns, or what step he takes, this wonderful bounty opens new vistas before him; where to begin, what path to move in first; it matters not, he is rewarded without toil. But, no! one step at a time and a pause to become accustomed to the new scene; as his eyes gradually adapt themselves to the light, behold a new object, new knowledge, and like the infant he stretches forth his uncertain hand to grasp the prize, and thus pursuing, he comes upon the great truths which have placed Chemistry before the world in the names of Berthollet, Liebig, Lavoisier, Rose and others, a mighty host — Chemistry indeed has loaded Medicine with her favors. The Chemist moves along patiently and unobtrusively, an humble and devoted worshiper at the shrine of wisdom, but he has developed, almost created, some of the most valued remedies which combat disease; he has entered our very organism and drawn out the lines of life, and in so much has enabled the physician to understand more intimately the nature of disease and to wield a more potent influence against it. Indeed, but for Chemistry, we still should be grossing in the mists of superstition and skepticism.

But even here she derives aid from an inseparable companion, if not so prominent, at least as essential and as worthy of praise. The manipulations of the Pharmacist upon the products of Chemistry are

wonderful in their extent and even elegance. The preparations of the drugs; the separation from the mass of the active component; the refinement of all the products of the *Materia-Medica* and Chemistry, are not less necessary and useful and beneficial, than the very production of the substances which are used as medicines. We have only to refer to the enormous and nauseous quantities of barks and bitters which were formerly given, and compare them with the minute bulk of the active principles and the agreeable forms in which they are now administered.

How wide the field then from which to gather this excess of material; how laboriously have been wrought out the few gems.

"That on the stretched forefinger of all time,
Sparkle forever."

And yet, we are but pioneers entering the virgin forests and making the first clearings. We cannot stop because somethnig has been done; the very little stimulates to further exertions; we have gained one point, the knowledge of how imperfect is yet the science of Pharmacy: not many years ago, indeed, hardly a generation, a few glimpses of the great truths of Chemistry broke upon the startled vision and while the student desired more and still pursued his work, he hesitated for fear of being too ardent and becoming bewildered by thick-coming fancies. But now that we read these great facts in a more sober light, we better appreciate their value and apply them to our further advancement, while at the same time we are taught how to proceed. It is with this field before us and a knowledge of how it must be cultivated; it is with these wants growing upon us, and a knowledge of how they must be supplied; it is with this great object of elevating Pharmacy above the mean and sordid motives, which at one time actuated her, that we at the present seek in every proper and possible way to attain these ends. Education of those who enter upon these studies is the first and most obvious means; the time has passed when the Druggist's Clerk should gain a knowledge of his profession by inhaling the emanations of drugs over the pestle and mortar, or breathing for a period the atmosphere of a drug store; to become a pharmacist requires study not only incident to the subject itself, but an actual and practical working out of all the branches connected with Pharmacy. This is best carried out and with more facility for the student and profit to the employer, as in all other kinds of knowledge, by instruction and illustration by those appointed for the purpose.

Colleges of Pharmacy are therefore as necessary as Colleges of Medicine, or of any branch of learning, and as we here in St. Louis have become impressed with their importance from witnessing their successful and beneficial operation elsewhere, as well in the manner in which they are conducted, as in the character and abilities of those who come

from them, we are compelled to act from such knowledge and in justice to ourselves and the community, to take, we trust, no inferior grade in our efforts towards a pharmaceutical education. When the country was still in its infancy and the means of intercommunication difficult and the advantages of a collegiate education hardly to be obtained, it was little to be wondered at, that the apothecary and the physician should fall into disrepute from their crude notions of medicinal agents and the manner and form in which they were given; but as civilization advanced, clearer ideas were attained as to the educational wants of the community and better ways were contrived to supply them. There can be no excuse now to the pharmacist and physician for his ignorance of this most essential study, Pharmacy. The means for information are ample and open to all.

We for our own part shall endeavor here, with what appliances we may have, increasing them from year to year as we gain in strength, to meet the wants and desires of this western valley in our College of Pharmacy. We place it among the institutions of the land; and while we seek the countenance of those who have ever extended a sustaining hand to the cause of education, we shall strive to become independent from our own exertions and win the laudable success which must result from the conscientious discharge of our duties.

Already, the auspices under which we commence our career are flattering even to the most cautious; already, the foundation has been laid and we have commenced the superstructure; we trust that our labors may culminate in a noble edifice; that as the subject we have in view is worthy our loftiest energies, so may those energies not be wasted, but concentrated, winning success, until at last we can look back, and seeing the results of our handiwork, claim the well earned satisfaction of having contributed some little to the advancement of the Science of Pharmacy.

I cannot refrain on the present occasion from pausing for a few moments, to contemplate the position which Pharmacy now holds among the sister sciences and to look back upon the successive yet slow and unequal steps by which she has attained that elevation; for, it will easily be conceived, if we acknowledge an actual progress in human learning, that our condition is far different now from what it must have been in ages gone by; then, it was but grossing in the midnight of uncertainty; now, we walk by the clear noon-tide; then, superstition mantled every thing with its darkness; now, all is radiant.

Medicine is coeval with man; from the time when our first parents did eat

"The fruit
Of that forbidden tree whose mortal taste
Brought death into the world, and all our woe,"

remedies were applied for the cure of human ills. It is not necessary now to inquire how man first ascertained the value of herbs as medicines, suffice it to say, see all things for our use; we are unable to reach the period in any country, when the inhabitants were destitute of some medical resource, and we find that medicine even amongst the most uncultivated has been cherished as a blessing and practiced as an art. A natural sentiment would have led man to communicate to his fellows the means which cured him of like sufferings; and thus we find among the most ancient records, that the custom was followed for ages, as among the Chaldeans, the Babylonians and the Assyrians, of exposing the sick on the high ways and in the market places, in order that they might converse with the passers by and receive from them the advice which some experience had offered them. This information, at first very limited and imperfect, was propagated by tradition and increased by successive observations. Thus art was born, but not science; for we can hardly denominate that science, which was confined to a few more or less imperfect notions, which experience had acquired and applied to the preservation of the health. — It is only in a far more advanced stage of civilization, as in Greece in her palmy days, when diseases and their cures were registered on tablets of marble in the temple of Esculapius, that science begins to be formed; the poetical and metaphysical conceptions of any age can little brook the slow results of observation. — In the birth of human society we find the chiefs, kings, heroes, poets and above all the priests exercising an art which gave to them power and consideration. Homer describes to us his heroes healing the wounds which they had made, and it is presumable that Orpheus, Linus and Hesiod did not confine themselves to singing the virtues of plants. The histories of the Jews celebrate in the wisdom of Solomon, his knowledge of medicine, and the Chinese attribute to their most ancient sovereigns the commencement of the art. But chiefly to the priesthood was accorded the most power in the healing art. Around the temples of antiquity revolved human society; and thus we ever see in the beginning of every nation, medicines in the hands of the Ministers of the Gods. Ruling with mighty tyranny, possessed of immense wealth, the intermediary between mortal and divinity, it was easy for the priest to possess himself exclusively of that power, which though small, he magnified by superstitious influences, and when utterly failing, covered with the sacred veil. Besides, diseases were a direct infliction of punishment by the Gods upon some erring mortal, the priest alone could appease their ire. But this period, however long its rule dominated, was but a transition, remaining stationary among those nations only, whose social constitution condemned to immobility; as the nations of the East. With respect to the actual nature of their remedies, it is clearly shown, that the ancients were in possession of many valuable and powerful ones,

Melampus, the most ancient Greek Physician, living 3200 years ago, made use of iron rust; though he enveloped its administration in much mystery; pretending to find from an augury, that his patient, when a boy, had stuck a knife into a consecrated tree; this knife was to be obtained and the rust scraped off and drunk in wine, for the space of ten days; history records the cure, which must have been royal, as the patient was the son of a king. Venesection was also practiced; Opium was known, the *Nepenthe* of Homer. There is reason to believe that the Sibyl never sat upon her portending tripod without swallowing some powerful narcotic, probably Opium. The sedative powers of the Lettuce were known to the most ancient, for among their fables we read, that after the death of Adonis, Venus threw herself on a bed of Lettuce to lull her grief. Squill was used by the Egyptians. In the camps of the Greeks before Troy, Nestor practiced incision and scarification and applied spirit to wounds. There are named in the Pentateuch about 20 minerals, 10 vegetables and animals. The most ancient recipes on records are of a confection and ointment. (Exodus XXX.)

But without indulging in vain research to know what was medicine among the different nations of antiquity, let us confine our attention to its condition among the Greeks. They were the preceptors of the human race, and to them we always turn when we seek for the actual creation of the arts and sciences. It is true, that they have been said to derive from Egypt and Asia more than the first rudiments of the arts; it is true that a remarkable analogy has been observed between the doctrines of the Grecian philosophers and those of the Hindoos; that Thales, Pythagoras, Democritus, Plato, Aristotle and Epicurus, did but reproduce the philosophical ideas of the East; but if we contest this scientific originality with them, which has so long been acknowledged as their right, we must award to them the honor of creating the science of medicine and giving it the first and most important development. Medicine, as a science, arose in Greece; it is only there that we find an Hippocrates, From their traditional and historical documents, we follow its progress to the present days.

It were difficult and tedious to trace the devious and uncertain cause of medicine in the midst of all the fables with which they prided themselves in obscuring their early civilization. Every power of nature was personified and invested with the attributes of Deity, as a natural result of the tendency of the human mind to refer to the supernatural what goes beyond our reason; especially was this so in the obscurities of disease produced by other than external causes. To Apollo, one among the most ancient divinities, the mystic representation of the sun, the source of all good and evil, was assigned the invention of medicine. He bestowed upon Esculapius, his reputed son, his wisdom and powers of cure, and as was the custom, after his death, he was placed among the

gods. It is probable, that much that is related of this renowned man is a fiction of the poets; or that his deeds and his cures seemed at that time so marvellous, and were painted in such glowing colors, as to entitle him to apotheosis: certain it is, that his skill was confined to the treatment of wounds and ulcers; and this was all the science of Hercules, Peleus, Chiron the centaur, Medea and Helen and other celebrated personages of those heroic times.

As far as related to internal diseases, which manifested themselves by symptoms only, and were not to be seen and touched, they appear to have been treated by superstitious practices: prayers, incantations, charms and amulets were the sole or the principal means that were used. Traces of amulets may be discovered in very early history. One of the Egyptian kings, who died 630 years before the Christian era, wrote, that a green jasper cut into the form of a dragon, surrounded with rays, if applied externally would strengthen the organs of digestion. What were the ear-rings which Jacob buried under the oak of Shechem, but amulets? Solomon did not hesitate to employ a charm in the cure of Epilepsy, when the root of the herb was concealed in a ring and applied to the nostrils of the patient.

Hence we have the eastern stories which celebrate the seal of Solomon and record the potency of its sway over the various orders of evil-spirits; tormentors and benefactors of the human race. But it needs not to refer to antiquity for examples of superstition in its most absurd form; the experience of every practitioner of medicine and perhaps of very many who are not, will suggest an infinite variety of cases even in this modern age, and I doubt not with the same implicit faith in their efficacy, and it has happened to every surgeon to see some fair being

“Who has drawn the splinter from the wound,
And with a charm has staunched the blood.”

Many of these superstitions remain with us and enter our every day life, without however that we attach any importance to them; “we little think that the coral toy which the fond mother suspends around the neck of her darling, is but the continuation of the practice, which was believed to ward off the evil one; the medical practitioner continues the use of the Mistletoe in the treatment of his epileptic patients, without thought or even knowledge of the ancient Druids, who held this plant as sacred.”

Still, with all this mass of superstition among the ancients, certain mythological traditions would seem to indicate the use of internal remedies in the cure of disease. The fables of Orpheus and Eurydice; of Prometheus delivered by Hercules from the vulture which preyed upon

his liver; of Alceste restored to life by the same hero, may be all examples of the cure of different diseases. What these means of cure were whether natural or superstitious, we cannot say; certain it is however, that different therapeutic agents, indicated either by instinct or chance, or by the imitation of natural phenomena were in use among the Egyptians, from whom the Greeks derived their first arts and their first religious practices. Bleeding in its various forms, baths, emetics, purgatives, the decoction of plants of more or less activity, formed a part of Grecian therapeutics. As to their origin, history fails to inform us, nor is it a matter of much importance; all that we do know, is the existence of these remedies for a very long period of time. During all that long period, when Greece was torn asunder by intestine troubles, for many hundreds of years after the Trojan war, medicine was practiced exclusively by the priests of Esculapius. The temples built to his honor were scattered over the various divisions inhabited by the Greeks. The ministers of these temples were at first the descendants of the pretended god; under the name of Asclepiades, they possessed by example or by tradition all that was known of the art of healing.

But such an institution was little adapted to advance the art of medicine, enclosed within temples and abandoned to a family or a peculiar caste; and thus all this science consisted for a long time in superstitious practices and in gross empirical precepts. These precepts, to appear more imposing, were attributed to the deity, who sent them in dreams to the patient, or through the intermediary of the priests; it would be useless to detail their ceremonies: they were such, as at any period, ignorance, superstition, charlatanism unite to impose upon the credulity of the vulgar. Superstition alone gave to them all their credit. But when Philosophy entered upon the description of the functions of man and of his diseases, when the same philosophy proclaimed to the world all that was known of medicine, as a natural result of its meditations, the followers of Esculapius, to sustain their reputation, were obliged to acquire real knowledge and to open the sanctuary thus far sealed to eyes profane. From that time a new era opened for medicine; from that time commenced its scientific career. So far, medicine, like other necessary arts, was the result of only a limited and imperfect observation, thenceforward we are prepared to see it take scientific form and systematize the information obtained on the phenomena of the animal organism.

Thales, of Miletus, is considered as the author of the revolution, which led the Greeks to the study of the phenomena of nature in themselves, and to seek for causes beyond these poetical ideas, which sufficed to explain so easily the origin and the general laws of the universe.

At this epoch, society in Italy and Asia Minor had obtained a high degree of civilization; the industrial arts had made great progress; everything was prepared for another direction to the intellectual forces, for the culture of the scientific mind, which follows so slowly the imaginative faculties. As a consequence, Thales, and after him a host of eminent men, turned their meditations upon the earth and its ruler, man. Unhappily, following an inclination which would seem very natural, they applied their powers to the solution of insoluble questions, such as first causes, or general propositions, which can only be approached by a profound knowledge of the phenomena of nature. In place of observing and collecting facts, they had recourse to the pure conceptions of the understanding, to suppositions, to trace the laws of the physical and moral world; and governed by an idea of unity, they endeavored to reduce all the phenomena of nature to a single principle, by material analogies, by abstract notions formed from the properties of numbers, or by speculations.

Such was the plan pursued by the Greek philosophers and too often also by their successors.

It is thus that the principle of all things resided in a material, humid, aeriform or igneous principle: that the earth and the water were regarded as the primitive elements; that the system of numbers explained the formation and order of the universe; that every substance was composed of similar elements, animated by a force which tended to bring them together and unite them; that we have the doctrine of atoms, which by their combination and separation, determine the formation and destruction of all bodies; that the origin of all things was in the four elements of fire, air, earth and water and to which everything returned. The doctrines of these ancient philosophers are known to us only in fragments: but if history has lost the precise and curious details; science certainly feels no poorer. The first philosophers, as has been well said, did harm and good to medicine: they rescued it from ignorance without method, but they precipitated it into many hazardous hypotheses; they transferred it from blind empiricism to imprudent dogmatism.

Such was the scientific state of medicine, when Hippocrates appeared: he was the representative of the school of Cos; he studied more carefully the causes of disease and the symptoms which would show their course and termination; his system of therapeutics was entirely empirical and he had recourse to a small number only of medicinal agents. Hippocrates was born 460 years before the Christian era, in the family of the Aesclepiades; he first gave to medicine a separate existence, and truly merits the title of creator, of father of medicine. The

uncertainty of history and also of the purity of the different writings attributed to Hippocrates, will ever prevent us from distinguishing with positiveness what belongs to him: but, if in default of positive proofs, we refer to the unanimous testimony of antiquity, we must admit that Hippocrates, either by his own works, or by making use of those of his predecessors and contemporaries, placed medicine upon a solid basis which till then did not merit the name of science.

The long period of time which extends from Hippocrates to Galen, embraces the most important epochs of scientific antiquity. Medicine, in this space of six hundred years, during which it made continual progress, and in numerous and extensive countries, united by the same civil and political manners, still did not advance so rapidly as might have been expected from its magnificent beginning and from the labour which was expended upon it. This came from the false direction given to medical research by the injurious influence of the different philosophic sects, which existed at this time. Carried away by these dogmas, which seemed to give the clue to the understanding of all physiological and morbid phenomena, the successors of Hippocrates gave themselves up to these hypotheses, which they varied in an infinite variety of ways. Of such was the ancient dogmatism derived from Plato. A desire to explain everything, the facility with which were adopted the most imaginative general principles, the ignorance or the imperfect knowledge of the structure of the human body, gave rise to opinions the most absurd and the most contradictory. Of such was the empirical sect which lasted almost to the time of Galen. The physicians of this school devoted their attention principally to the properties of medicines; they proscribed anatomy and physiology. In spite of the great number of errors which the empirics propagated, they advanced *Materia-Medica* by directing research to a great number of medicinal substances; but they forgot, that to use remedies successfully, disease must first be known. The empirics degenerated into charlatans, for whom all science consists in prescribing blindly certain agents for diseases the most opposite.

And thus, during this period, if we glance at the innumerable theories of medicine which prevailed, we shall recognize the injurious influence of system, and the not less fatal one of empiricism which occupied itself entirely in remedies and specifics. Men, who might have served sincere by useful labors, did not hesitate to seek celebrity and the favors of fortune by the invention or the application of remedies the most strange and inefficacious. Almost all the famous names of this epoch have descended to us through the agency only of what we call in our day quack medicines. Andromachus of Crete, who in the reign of Nero was his chief physician, is known by the composition of a confection, upon which he wrote a poem.

As a matter of curiosity I give the composition of this "Electuarium Opiatum Polypharmacum." It was supposed to have been invented by Mithridates, the famous king of Pontus, and was published in Rome under his title of "Antidotum Mithridaticum." In the course of ages it underwent numerous alterations. According to Celsus, who first described it, it contained only 35 simples. Andromachus added vipers and increased the number of ingredients to 75, and when thus reformed he called it *Golene*, but in Trajan's time it obtained the name of *Theriaca*, either from the vipers in it, or from its supposed efficiency against the bites of venomous animals. It seems then that its composition has hardly remained the same for a hundred years.

This preparation consists of Acria, 5 species; Amara, 8; Astringentia, 5; Aromatica exotica, 14; Aromatica indigena, 10. Aromatica ex umbelliferis, 7; Resinosa et Balsama, 8; Grave-Olentia, 6; Virosa, 1, which was Opium; Terrea insipida et inertia, the Lemnian Earth; Gummosa, Amylacia, 4; Dulcia, Liquorice and Honey; Vinum.

The diseases of the eyes and ears and of the skin, which seemed to have been very prevalent in the principal cities of the Roman Empire, were above all the subject of numerous recipes, which have been left us by the physicians of those times. The names of oculists are particularly known by the inscription on the seals of the boxes and jars which contained their remedies. We find also that every one, according to circumstances, could practice medicine either as a whole or in parts; hence the denominations of dietetic pharmaceutical and surgical practitioner of medicine and the more real distinction of oculist, dentist, specialist on diseases of the joints, the intestines, &c., which gave rise to the observation of Galen, that there were as many specialists, as organs in the human body.

Such was the state of medicine, confused by the most different sects, by opinions the most opposed and by the grossest empiricism, when Galen appeared upon the scene. Profoundly versed in all the knowledge of the schools of philosophy and medicine, endowed with a vast conception and with all the qualities of a profound observer, but at the same time with a most subtle intellect and a most ardent imagination, Galen sought to remove the anarchy from medicine, by substituting a new dogmatism, which embraced all the scientific and speculative notions introduced up to his time. Although formed of the remnants of ancient doctrines, this system of Galen presented a seductive whole in which all the facts of science were admirably fitted; without entering into a summary even of his system, suffice it to say that it predominated in science a long series of ages. It may well be conceived, what enthusiasm such a man inspired, who had originated a doctrine to all ap-

pearance so complete. The lustre which his imagination diffused upon his doctrine dazzled the eyes of every beholder, and he was admired and imitated more in his errors than in his great qualities.

For fourteen hundred years Galen was a god in medicine; no one but swore by him; "Marcus dixit? ita est." His authority was absolute; and long and unheard of were the efforts to depose it. But however injurious this blind submission may have been to the progress of science, it was successful in this, that it diffused everywhere the positive knowledge which had been up to his time acquired in medicine: by his writings we establish a connecting link between ancient and modern medical science. The numerous works of Galen are a vast repertory of facts, though concealed in the midst of prolix and fatiguing discussions.

But at this time was formed a new sect out of the religious doctrines of the East. All the cabalistic arts of the Orientals overwhelmed as well science as the people. Medicine was carried away in the torrent. Observation of nature became impossible in a system, which attributed everything to superior influences. The study of natural sciences was devoted to the search of ridiculous chimeras, such as the transmutation of metals; medicine was nothing more than magic, in which talismans, amulets, mysterious words played the principal roll. Thus in all the long period, which extends from Galen to the Arabians, where medicine, from its constant utility, resisted more than other sciences the attacks of barbarism, there were very few who appeared and placed themselves prominent before the world. Creative thought was henceforth dead, and we see compilers only.

Among the Arabians, Chemistry and Pharmacy alone of all the sciences seemed to make any valuable progress: they discovered many new products and enriched the *Materia-Medica* with many new remedies, but at the same time the poly-pharmacy of Galen infused itself into all their ideas of therapeutics. If therefore we owe something to the Arabians, it is only that they kept alive the sparks, which in the fourteenth century should relight the torch of science.

Whilst the Arabians of the East and of Spain collected the remnants of scientific antiquity, the West of Europe was covered with thick darkness. A few monks, a little less ignorant and quite as superstitious as the half savage nations by whom they were surrounded, possessed themselves of medicine, if we can call by that name the gross empiricism which they practiced. In their hands, the healing art returned to what it had been under the first *Aselepiades*. Instead of to medicinal agents, they had recourse to prayers, to the relics of Saints, to the aspersions of holy water for the restoration of health. In Great Britain

there was some show of medical science; in France, Charlemagne gathered at his court several prominent scientific men; he instituted the schools of the cathedrals and monasteries, which were ultimately united. In these schools were taught the seven liberal arts, grammar, arithmetic, dialectics, rhetoric, music, geometry and astronomy, the only branches of knowledge of which any study was made; afterwards was added the study of medicine. But this art had fallen to a very low degree, for by many councils it was forbidden to be practiced to the members of the higher clergy. It is at an epoch not very far distant from this, in the year 1200, that the University of Paris was founded by Philip Augustus, and on the model of this institution all the others which appeared about the same time in France and other parts of Europe.

But the degrading servility to the Arabian authors and the influence of the scholastic philosophy were barriers in the way of much further advancement. Thus during the thirteenth and fourteenth centuries the physicians of the different countries of Western Europe did but repeat the lessons, which they had learned in Arabian works; on the other hand, the spirit of speculation and dispute of the scholastic philosophy, and above all the disdain for any positive knowledge, subjected medicine to blind authority and dull routine. Hence we hardly expect to find in the authors of the thirteenth and fourteenth centuries, anything else than the commentaries of the Arabians, the astrological and alchemical reveries, vain discussions upon the essence of primary causes, upon the occult qualities of medicines, upon the power of charms and amulets. Yet there were certain lights which penetrated this gloom and among these was the monk Roger Bacon, far before the age, yet could not carry it along with him. This worthy precursor of the illustrious Chancellor of that name, makes observation as the basis of all science, combats magic and seeks in physical laws the explanation of phenomena regarded as supernatural; finally, he insists upon the study of the ancients. But to give something to his time, the 'admirable doctor' of the thirteenth century devotes his attention to the transmutation of metals and the universal panacea.

In the fifteenth century, there existed a general taste for visions of all sorts. Most of the celebrated men believed in alchemy and astrology, in demoniac diseases, in chiromancy and other species of superstition. Sympathies and Antipathies were explained by the passage of atoms from one body to another. These atoms were metamorphosed into demons or spiritual substances emanating from the divinity; the deity became the immediate existing cause of all phenomena. In the midst of these favorable circumstances Paracelsus appeared. The fire of his character, the tone of assurance and emphasis with which he spoke of his

marvelous cures, whilst he threw at his feet the productions of the greatest minds, the mystic language which he employed, his adventurous life, all was calculated to attract the multitude and carry it along with him. His writings were not less calculated to strike upon the public mind: his medical system was a conglomerate of chemical ideas, mixed up with astrology; he believed that salt, sulphur and mercury were the three elements of things; to these he added the demon which presides over the stomach and separates the poisonous from the nutrient principles. His therapeutics admitted specific properties in medicines; he taught that the true objects of alchemy was not the making of gold, but the preparing of secret remedies proper to prolong life.

During the course of the seventeenth century we find a rapid progress in medicine, aside from the advance in the various branches of that science, the *Materia-Medica* was enriched with many powerful remedies, especially among them was tartar emetic; ipecacuanha was introduced into therapeutics: cinchona was recognized as the surest remedy against intermittent fevers. This century was also remarkable for the institution of learned societies, which in this epoch and in the succeeding century were so useful in the increase and diffusion of knowledge. Toward the end of the century were created the celebrated Academies of Science of London and of Paris, whose labors produced those grand collections, continued to the present time, and in which medical science occupies an honorable rank.

The commencement of the eighteenth century was marked by three men, the most eminent, who have appeared in medicine, and their doctrines are the parent of those we participate in at the present day. I refer to Stahl, Hoffmann and Boerhaave. Stahl, a profound chemist and physiologist, believed in an *animus*, by whose aid the healthy and diseased forces were directed; Hoffmann imagined a system founded upon the material forces which the organism possesses. The human body for him was a machine, all whose efforts result from motion and of which we can explain the play by the laws of ordinary mechanics, or by those of a superior mechanic not yet discovered. Boerhaave was not a pure mechanician; he associated with his mechanical explanations humoral theories founded upon the alteration of the fluids. But this century is filled with the names of illustrious men: Haller, Morgagni, Sauvages, Linneus, Vogel, Cullen, and a host of others.

I have thus endeavored to trace, I trust for your delectation, the rise and progress of medical science; do not consider that I have wandered from my confines and encroached upon those of the physician; the history of Medicine is a history of Pharmacy; for what has been that

long array of theories and hypotheses adown the path of ages, but an effort on the part of the human mind to understand disease and to meet it with the weapons girded on according to the measure of that understanding? Theories have arisen and "fretted their hour upon the stage and then been seen no more;" and so will it ever be; monuments of human ignorance will be raised to perpetuate the name of the architect, but they will come at last to be looked upon as specimens of curious workmanship. Yet, these theories may have answered a purpose in developing error after error so as ultimately to place us in the true course towards truth: let us believe so at least, since we at last know, that the only way to pursue science is by observation and experiment, contenting ourselves with following along that pathway disclosed here and there by a few scattered rays from the centre of light, but not rushing forward by the glare of our own rude torches, often blinded by their murkiness, more often led astray by their flickering uncertainty. It is fortunate indeed that the pursuit of Pharmacy in its different branches depends upon the actual use of the substances which nature provides and in the successful interpretation of her laws.

You, Gentlemen, who are about entering upon this study, and who have placed yourselves under our guidance, will find that the information you may receive and which you will appropriate to yourselves, is derived from actual experiment in the laboratory. Let your efforts be turned in that direction therefore and let your energies be poised on such a basis. While we give you positive knowledge, we hope to tell you its use and whither it tends, that afterwards you may look upon this College, which is to be your Alma Mater, and acknowledge that it has given to you an influence in the right direction not only to worldly success, but also to the attaining of honor among those who are working in the cause of science.

To you, Gentlemen of the Board of Trustees and of the College of Pharmacy, who have initiated this enterprise with much anxiety perhaps as to the immediate result, but certainly with no feeling of real danger as to ultimate success, to you will redound the credit and honor of having subverted the old order of things in this Western Valley and placed Pharmacy in its true position before the community and elevated the body of apothecaries to its real dignity of a profession.

From henceforth we shall perceive a new animus actuating this large and highly respectable class and a new object inviting it to activity. You will win success in your undertaking, the result of your energies, but let this not be the sole element in the question before you : to establish Pharmacy as a science on the firm basis of experiment and observation, this should be your ultimate object, this your "primum mobile;" be it yours as you walk along the sands of life, to gather here and there as thrown in unto you by the great ocean, a few pebbles, rounded and polished and fitted for your use.



